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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,061	09/04/2002	Rainer Blum	P 290585	8997
909	7590	07/29/2004	EXAMINER	
PILLSBURY WINTHROP, LLP P.O. BOX 10500 MCLEAN, VA 22102			PADGETT, MARIANNE L	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/069,061	Applicant(s) BLUM ET AL. 	
	Examiner Marianne L. Padgett	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

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1. As applicants have discussed “near-infrared” or NIR to include wavelengths outside the infrared range (i.e. in the visible range) in their specification, while it is contrary to normal and conventional meaning, the disclosure in the specification makes it permissible to do so, according to some court cases. As the claims now clearly define what range of wavelengths is claimed, the 112 rejection concerning the uncertain meaning of NIR is removed.

The rest of the 112 problems, except in claim 4, have been corrected, although it is additionally noted that in claim 13, in the previous amendment “an” before “electrical” (line 2) was informally changed to “and”, but would be more logical as originally written.

2. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, line 2 still employs the inconsistent plural “the coats” that indicates multiple coats when the independent claim only applies one, making it unclear whether or not plural is a new limitation or a typographical error.

3. The disclosure is objected to because of the following informalities: On page 11, there are two “Example 3 (E3)” where E1 precedes them on page 10. There is no E2. It is further noted that page 10, lines 14-17, identify the resin used in the examples by only a trade name, such that what it is, is not determinable by the examiner.

Appropriate correction is required.

4. The 102 over Buckley et al (EP 0,064,147) is removed due to the amendment to specifying use of a wavelength in a defined range.

It is noted that the examples pointed out as evidenced (3 which?) and 4) by applicant (page 5-6 of 3/02/04 response) are directed to curing a specific resin, “Dobeckan MF 8001-UV” whose composition, except for being monomer free and containing photoinitiators (generic), is undisclosed. Any benefits

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ascribed to the examples (second E3 + E4), can only be to resins of whatever essentially unidentified type that were treated therein, not to all resins of what variety that may be employed, hence applicant's arguments against the 103 rejections are not convincing, as the examples do not show a generic advantage to the specific choice of wavelength from a broad wavelength range spanning parts of both visible and IR spectra. The claims are generally directed, while the examples are specifically, but unclearly directed (note that a prior art showing of what type of resin the disclosed trade name encompasses, can enable correction/amendment of the specification to provide this information).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buckley et al.

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Buckley et al was discussed in sections 4 and 5 of paper No. 7, mailed 11/28/03, and the claims now differ by reciting specific wavelengths in the independent claims, but the 103 is still considered relevant for reasons as discussed above in section 4. It is additionally noted with respect to the amendment to claim 9, that on p. 2 and 8, the use of UV as well as IR is disclosed.

7. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buckley et al as applied to claims 1-14 above, and further in view of Lienert (DE 196 48 133 A1000) as previously applied in section 6 of paper No. 7.

8. Claims 1-2, 4, 6, 10, 12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Linderoth et al (4,234,624).

In Linderoth et al, see the abstract; figures; column 1, lines 5-15, 45-50+, 60-68+; column 2, lines 11-25 and 41-62; column 3, lines 35-39 and 50-57, for coating electrical cable with insulation via extrusion of the polymer onto the substrate and thermally curing under pressure by cross-linking with NIR radiation, preferably having wavelengths between 0.76-4  $\mu\text{m}$  (760 to 4000 nm), where exemplary maximum intensity obtained at 1.2 or 1.0 microns (1200 nm or 1000 nm) are given.

9. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buckley et al, optionally in view of Lienert as applied to claims 1-14 above, and further in view of Linderoth et al.

Alternately to the above rejections of sections 6-7, Linderoth et al further shows the obviousness of employing specific wavelengths in order to treat radiation curable polymer material on electrical conductors, thus it would have been further obvious to employ such wavelengths for the suggested IR curing taught by Buckley et al, as they have been demonstrated to be effective in analogous situations; as Buckley does not specify what specific IR wavelengths are preferred or effective; and as Linderoth et al teach that their radiation technique enables the heat to be effectively transfer through the extra cross-section of applied material (paragraph bridging column 1-2), which would also have been important to curing electrical windings coated in Buckley et al.

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10. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linderoth et al.

While Linderoth et al do not teach the percentage of absorbance by the coating material, they do suggest that alternative maximum intensities can be employed as well as various compositions. It would have been obvious to one of ordinary skill in the art to optimize the range of wavelengths applied to maximize the absorbance, as such would increase efficiency and thus decreased energy use, i.e. cost, which is always important in manufacturing process.

While the apparatus of Linderoth et al is not said to employ a "electrical regulator" that adjust, i.e. effects, wavelength or energy, the suggestion of employing alternative operating temperatures for the W-filament lamp that corresponds to different maximum wavelengths, strongly suggests that such regulator may be present in order to effect such alternative choices, hence it would have been obvious to one of ordinary skill to include a regulator for the lamp's operating temperature, both in order to maintain a desired output, and in order to allow the device to be used for a wider range of curing wavelengths as suggested, as a more flexible operating range, makes the device more useful, hence economical.

11. Claims 1-2, 6, 9-10, 12 and 14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hwang et al (5,705,232).

In Hwang et al, see the abstract; column 1, lines 25-40; Summary; column 2, line 28- column 3, lines 12-20 and 38-44, for spin coating dielectric material on to semiconductor integrated circuit substrates with metalized components, where baking and curing are employed. Hot plates in the spin chuck may be used in combination with heat lamps, which may use IR in the spectral range of 1-3.5 microns (i.e. 1000-3500 nm), or additionally other types of IR and UV producing lamps may be employed. It is taught that the window separating the lamp and treatment area may be used to cause filtration of wavelengths as required depending on type of material and temperature sensing is employed to enable superior temperature control.

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12. Claims 5, 7, 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang et al.

While Hwang et al do not explicitly discuss the heating on application as causing gelling, it would have been obvious to one of ordinary skill in the art if heat is being used to dry and/or cure as taught, then the initial heating of the hot plate on spin coating would have been obvious to control or to cause the spin coated liquid cast onto the substrate to at least partially gel due to suggestions on the use of heat, ie. drying or curing generally cause thickening of the viscosity, which can be considered inclusive of gelling.

While the apparatus of Hwang et al does not detail the presence of an "electrical regulator ...", the teaching of temperature mapping used to provide superior temperature control would have suggested to one ordinary skill to employ an electrical regulator to effect the taught desired control, as automatic control provided thereby is the most practical way of accomplishing this taught feature.

13. Other art of interest includes Nohr et al (6,090,236 or 6,277,897 B1), which discuss use of photoinitiator with increased absorbance, where taught radiation used therewith includes UV, visible and NIR (4-1000 nm). Other copending cases of interest include 10/069,020; 10/181,437; 10/203,391 and 10/182,917, which may all cure with near infrared radiation, but are used for different end uses.

14. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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15. Claims 1-11 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 8 and 10 of U.S. Patent No. 6,146,717 in view of Linderoth.

The patented claims while claiming limitations in different orders, with the specific component required to be an electrical winding, as in this application's claim 11, differ only by claiming more generic curing ranges instead of present ranges, such as IR or UV, or combinations thereof. As discussed above, for Linderoth et al, the claimed ranges provide curing advantages which would have been equally applicable and obvious for reasons as set forth above, when applied to the (717) claims.

16. Applicant's arguments filed March 2, 2004 and discussed above have been fully considered but they are not persuasive.

Applicant's arguments with respect to claims 1-14 have been considered but are further moot in view of the new ground(s) of rejection.

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on Monday-Friday from about 8:30 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M.L. Padgett/dh  
July 13, 2004

July 27, 2004



MARIANNE PADGETT  
PRIMARY EXAMINER